

Exercise - Functional Interfaces and Lambda Expressions

Problem Statement

You are developing software for a restaurant to manage its menu items. Each menu item belongs to a specific category such as appetizers, main courses, desserts, etc. You decide to implement functionality using Functional Interfaces and Lambda Expressions to categorize and process menu items.

Part 1: Implementing Menu Items

Define a class `MenuItem` with properties such as `name`, `price`, and `category`. Implement this class with appropriate constructors and getter methods.

Part 2: Categorizing Menu Items

Create a Functional Interface called `CategorizeMenuItem` that takes a menu item as input and returns a string representing its category. Use a Lambda Expression to categorize the menu item based on its name or any other relevant property.

Part 3: Special Offers

Implement a Functional Interface called `ApplySpecialOffer` that takes a menu item as input and applies any special offers or discounts based on its category. Use a Lambda Expression to determine the category of the menu item and apply the appropriate discount or offer.

Part 4: Handling Unknown Categories

Handle the case where a menu item belongs to an unknown or unsupported category. If the category cannot be determined, return a default value or throw an exception